

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/940,526

REMARKS

The Examiner attaches to the Office Action a copy of the Form PTO-1449 filed with Applicants' Information Disclosure Statement of August 29, 2001. However, the first document, JP54-135004, has been lined through without any explanation.

The Examiner is kindly directed to page 4 of Applicants' specification, which provides a description of JP54-135004. Accordingly, the Examiner is respectfully requested to consider this document. Applicants attach herewith a Form PTO/SB/08 A&B (modified) citing this document for the Examiner's convenience.

In the present Amendment, claim 1 has been amended to incorporate the subject matter of claim 2. Claim 2 has accordingly, been cancelled.

Claim 6 has been amended to be in independent form. This amendment is supported by original claims 1, 2 and 6.

Claims 15 and 16 have been amended to be in independent form.

Claims 19 and 20 have been amended to replace "a developer that does not substantially contains a silicate" with --a developer in which the content of the silicate is not more than 0.5 % by weight--. This amendment is supported by the specification at, for example, page 110, lines 10-12.

Claims 3-5 and 7 have been cancelled.

No new matter has been added and thus, entry of the Amendment is respectfully submitted to be proper. Upon entry of the Amendment, claims 1, 6 and 8-20 will be all the claims pending in the application.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/940,526

In Paragraph No. 3 of the Action, claim 2 has been rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite.

In this Amendment, Applicants have amended claim 1 to incorporate the subject matter of claim 2 and accordingly, canceled claim 2. Accordingly, Applicants apply the rejection to claim 1. Applicants respectfully submit that claim 1 as amended is not indefinite.

Applicants respectfully submit that the addition polymerization process recited in original claim 2 is the telomerisation method of claim 1 with specific limitations. According to “Polymer Science Dictionary,” Mark S. M. Alger, Elsvier Applied Science (1989), the term “telomerisation” is defined as “polymerisation carried out in the presence of a large amount of an active chain transfer agent (the telogen) so than only low weight polymers (the telomers) are produced, which have end groups that are fragments of the telogen” (page 468). Applicants submit herewith a copy of the definition of “telomerisation” from the Polymer Science Dictionary. The definition of “oligomer” from this dictionary is also provided. The “alkyl iodide” in original claim 2 corresponds to the “active chain transfer agent (telogen).” The same explanation is provided on page 22 of the specification, lines 13 to 20.

In view of the above, the Examiner is respectfully requested to reconsider and withdraw the rejection.

In Paragraph No. 5 of the Action, claims 1-4, 7-14, and 17-20 have been rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Kawamura et al (US Pat. No. 6,132,931).

Applicants respectfully submit that the claims as amended are not anticipated by Kawamura et al.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/940,526

Kawamura et al discloses a photosensitive composition comprising a fluorine-containing copolymer. However, Kawamura et al does not teach or suggest the method(s) for making the fluoroaliphatic group, let alone the specific method as recited in the present claims.

Regarding claim 8 and the subsequent dependent claims 9-14 and 17-18, Kawamura et al discloses that a mixture of the monomers, which are different from each other in the chain length of perfluoroalkyl groups, can be used. However, Kawamura et al does not disclose or suggest the specific ratio of the respective monomer units, the preferable alkyl chain length or the effect.

On the other hand, the present inventors attained unexpectedly superior effects by using a fluorine-containing polymer having a specific chain length and ratio of the respective monomer units.

Regarding claims 19 and 20, Applicants have in this Amendment, amended claims 19 and 20 to further define the content of the silicate in the developer to be --not more than 0.5 % by weight--.

Kawamura et al discloses in Examples 1A to 5A that the developer contains SiO_2 in an amount of 1.4%, which is outside the range recited in the present claims. Further, as described on page 109, line 18 of the present specification, the effect of the present invention becomes more remarkable when a developer that does not substantially contain silicate is used, which means as defined on page 110, line 10 of the present specification, an SiO_2 content of 0.5% by weight or less, preferably 0.1% by weight or less, more preferably 0.01% by weight or less.

In view of the above, the Examiner is respectfully requested to reconsider and withdraw the §102(e) rejection.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/940,526

In Paragraph No. 7 of the Action, claims 1-4, 7-14, and 17-20 have been rejected under 35 U.S.C. §103(a), as allegedly being unpatentable over Kawamura et al in view of Kodama et al (US 6,485,883).

Applicants respectfully submit that the claims as amended are not obvious over Kawamura et al in view of Kodama et al, because Kodama et al is not proper prior art.

The Kodama et al patent issued on November 26, 2002, to Fuji Photo Film Co., Ltd. Kodama et al has a U.S. filing date of January 26, 2001. Therefore, Kodama et al is prior art as of January 26, 2001 under §102(e).

On the other hand, in the present application, Applicants claim a foreign priority date of August 29, 2000, which is prior to January 26, 2001. Applicants submit herewith a sworn translation of their priority document, JP 2000-259525, to perfect their claim to priority. Support for the present claims in JP '525 is set forth below:

Present Claims as Amended	Support in JP '525
claim 1	claim 1; [0018]-[0019]
claim 8	claim 2
claim 9	[0034]
claim 10	[0036]-[0038]
claim 11	[0048]
claim 13	[0080]
claim 14	[0080]
claim 18	[0035]

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/940,526

Accordingly, Kodama et al is not prior art against the claims of the present application.

Further, Applicants submit that both Kodama et al and the present invention were owned by Fuji Photo Film Co., Ltd. at the time the invention was made. Accordingly, Kodama et al cannot be proper prior art. See 35 U.S.C. § 103(c).

In view of the above, the Examiner is respectfully requested to reconsider and withdraw the §103(a) rejection.

In Paragraph No. 9 of the Action, claims 1-4 have been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Goto (US Pat. No. 6,270,940 B2) in view of Kodama et al.

Applicants respectfully submit that the claims as amended are not obvious over Goto in view of Kodama et al, because Kodama et al is not proper prior art, for the reasons as set forth above. Accordingly, the rejection should be withdrawn.

In Paragraph No. 11 of the Action, claims 1-3, 5 and 19 have been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kimura et al (JP 2000-187318) in view of Kodama et al.

Applicants respectfully submit that the claims as amended are not obvious over Kimura et al in view of Kodama et al, because Kodama et al is not proper prior art, for the reasons as set forth above. Accordingly, the rejection should be withdrawn.

In Paragraph No. 12 of the Action, claims 6, 15 and 16 have been objected to as being dependent upon rejected base claims. The Examiner indicates that claims 6, 15 and 16 would be allowable if rewritten in independent form.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/940,526

Applicants respectfully submit that the claims as amended are in proper form. While not admitting the rejections are proper, Applicants have in this Amendment, amended claims 6, 15 and 16 to be in independent form, as suggested by the Examiner. Accordingly, the objection should be withdrawn.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Fang Liu
Registration No. 51,283

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE



23373

PATENT TRADEMARK OFFICE

Date: June 30, 2003

APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 2-5 and 7 are canceled.

The claims are amended as follows:

1. (Amended) A lithographic printing plate precursor comprising an image forming layer containing at least one polymer compound having a fluoroaliphatic group on the side chain, wherein the fluoroaliphatic group is derived from a fluoroaliphatic compound produced by a telomerization method of addition-polymerizing a tetrafluoroethylene in the presence of an alkyl iodide compound, or an oligomerization method.

6. (Amended) The lithographic printing plate precursor as claimed in claim 1 A lithographic printing plate precursor comprising an image forming layer containing at least one polymer compound having a fluoroaliphatic group on the side chain, which further comprises and an aluminum substrate, wherein

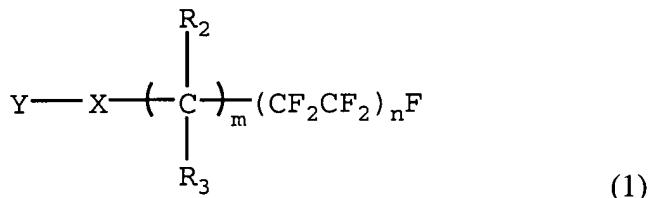
the image forming layer is a photosensitive layer containing a light-heat converting agent, a heat radical generator and a radical polymerizable compound, and the photosensitive layer can decrease in the solubility in an alkaline developer upon exposure to laser beams, and

the fluoroaliphatic group is derived from a fluoroaliphatic compound produced by a telomerization method of addition-polymerizing a tetrafluoroethylene in the presence of an alkyl iodide compound, or an oligomerization method.

15. (Amended) The lithographic printing plate precursor as claimed in claim 8, which further comprises A lithographic printing plate precursor comprising

(A) an image forming layer containing at least one polymer compound, the polymer compound having a fluoroaliphatic group on the side chain,

wherein the fluoroaliphatic group is represented by the formula (1):



wherein R₂ and R₃ each independently represents a hydrogen atom or an alkyl group having from 1 to 4 carbon atoms, X represents a single bond or a divalent linking group, Y represents a moiety for binding to a polymer main chain, m represents an integer of 0 or more, and n represents an integer of 1 or more, and

the polymer compound comprises four fluoroaliphatic groups in which n in formula (1) is 3, 4, 5 and 6, respectively,

wherein the polymer compound satisfies one of the following conditions (I) and (II):

(I) a monomer unit having the fluoroaliphatic group in which n in the formula (1) is 4, accounts for 40 to 97 mol% based on the sum total of the monomer units having groups in which n in the formula (1) represents 3, 4, 5 and 6; and

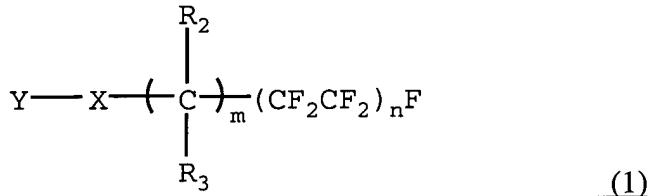
(II) a monomer unit having the fluoroaliphatic group in which n in the formula (1) is 3, accounts for 40 to 97 mol% based on the sum total of the monomer units having groups in which n in the formula (1) represents 3, 4, 5 and 6, and

(B) an aluminum substrate,

wherein the image forming layer is a photosensitive layer containing a light-heat converting agent and a binder resin, and the photosensitive layer can increase or decrease in the solubility in an alkaline developer upon exposure to laser beams.

16. (Amended) ~~The lithographic printing plate precursor as claimed in claim 8, which further comprises~~ A lithographic printing plate precursor comprising
(A) an image forming layer containing at least one polymer compound, the polymer compound having a fluoroaliphatic group on the side chain,

wherein the fluoroaliphatic group is represented by the formula (1):



wherein R₂ and R₃ each independently represents a hydrogen atom or an alkyl group having from 1 to 4 carbon atoms, X represents a single bond or a divalent linking group, Y represents a moiety for binding to a polymer main chain, m represents an integer of 0 or more, and n represents an integer of 1 or more, and
the polymer compound comprises four fluoroaliphatic groups in which n in formula (1) is 3, 4, 5 and 6, respectively,

wherein the polymer compound satisfies one of the following conditions (I) and (II):
(I) a monomer unit having the fluoroaliphatic group in which n in the formula (1) is 4, accounts for 40 to 97 mol% based on the sum total of the monomer units having groups in which n in the formula (1) represents 3, 4, 5 and 6; and

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/940,526

(II) a monomer unit having the fluoroaliphatic group in which n in the formula (1) is 3,
accounts for 40 to 97 mol% based on the sum total of the monomer units having groups in which
n in the formula (1) represents 3, 4, 5 and 6, and

(B) an aluminum substrate,

wherein the image forming layer is a photosensitive layer containing a light-heat converting agent, a heat radical generator and a radical polymerizable compound, and the photosensitive layer can decrease in the solubility in an alkaline developer upon exposure to laser rays.

19. (Amended) A plate-making method comprising:

imagewise exposing a lithographic printing plate precursor according to claim 1; and
processing the plate precursor with a developer ~~that does not substantially contain a~~
~~silicate in which the content of a silicate is not more than 0.5 % by weight.~~

20. (Amended) A plate-making method comprising:

imagewise exposing a lithographic printing plate precursor according to claim 8; and
processing the plate precursor with a developer ~~that does not substantially contain a~~
~~silicate in which the content of a silicate is not more than 0.5 % by weight.~~

POLYMER SCIENCE DICTIONARY

MARK S.M. ALGER

富士写真フィルム(株)
吉田南工場研究部図書室



Y0017402

ELSEVIER APPLIED SCIENCE

POLYMER SCIENCE DICTIONARY



MARK S. M. ALGER

*London School of Polymer Technology,
Polytechnic of North London, UK*



ELSEVIER APPLIED SCIENCE
LONDON and NEW YORK

ELSEVIER SCIENCE PUBLISHERS LTD
Crown House, Linton Road, Barking, Essex IG11 8JU, England

Sole Distributor in the USA and Canada
ELSEVIER SCIENCE PUBLISHING CO., INC.
52 Vanderbilt Avenue, New York, NY 10017, USA

© ELSEVIER SCIENCE PUBLISHERS LTD 1989

British Library Cataloguing in Publication Data

Alger, Mark S. M.
Polymer science dictionary.
1. Polymers. Encyclopaedias
1. Title
547.7'03'21

ISBN 1-85166-220-0

Library of Congress Cataloging in Publication Data

Alger, Mark S. M.
Polymer science dictionary/Mark S. M. Alger.
p. cm.
ISBN 1-85166-220-0
1. Polymers and polymerization—Dictionaries. I. Title.
QD380.3.A52 1989
547.7'03'21—dc19 88-11034
CIP

No responsibility is assumed by the publisher for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products, instructions or ideas contained in the material herein.

Special regulations for readers in the USA

This publication has been registered with the Copyright Clearance Center Inc. (CCC), Salem, Massachusetts. Information can be obtained from the CCC about conditions under which photocopies of parts of this publication may be made in the USA. All other copyright questions, including photocopying outside the USA, should be referred to the publisher.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher.

n-OCTYL-n-DECYL ADIPATE (DNODA)

B.p. 220–250°C/4 mm. The adipic acid esters of the mixed isomers of eight and ten carbon alcohols. Useful as a plasticiser for imparting good low temperature flexibility, with reasonable permanence, in polyvinyl chloride and its copolymers, cellulose esters, polystyrene and polyvinyl acetate.

ODCB Abbreviation for *o*-dichlorobenzene.

OENANTHOLACTAM Alternative name for enantholactam.

OENR Abbreviation for oil extended natural rubber.

OGDEN'S THEORY A theory of rubber elasticity based on the assumption that the strain energy function (*W*) may be written in the very generalised form

$$W = \sum_n (\mu_n / \alpha_n) (\lambda_1^{\alpha_n} + \lambda_2^{\alpha_n} + \lambda_3^{\alpha_n} - 3)$$

where α_n may have any value, μ_n is a constant and λ_1 , λ_2 and λ_3 are the principal extension ratios. This leads, for example, to the nominal stress (*f*) in simple extension being given as

$$f = \sum_n \mu_n (\lambda_1^{\alpha_n-1} - \lambda_1^{(-\alpha_n/2)-1})$$

Such results can provide good fits to the actual stress-strain behaviour (in pure shear and in equi-biaxial tension) with only a two term formula.

OI Abbreviation for oxygen index, which is an alternative name for limiting oxygen index.

OIL EXTENDED NATURAL RUBBER (OENR) Natural rubber containing an oil extender, such as a petroleum oil, up to about 50 phr to reduce the product cost and/or to soften it.

OIL EXTENDED RUBBER A rubber to which a compatible oil has been added. Up to about 50 phr of a naphthenic, paraffinic or aromatic oil may be used especially in natural rubber (to give oil extended natural rubber), styrene–butadiene rubber and butadiene rubber. The oil may be added to decrease cost, but also acts as a plasticiser, softening the rubber and therefore acting as a processing aid and reducing stiffness in the vulcanisate.

OIL LENGTH The amount of drying oil (drying, semi-drying or non-drying) present in an alkyd resin. Resins may be classified according to oil length as short oil, medium oil or long oil resins.

OIL MODIFIED ALKYD RESIN What is usually meant by the term alkyd resin, i.e. a branched polyester of a dibasic acid (frequently phthalic anhydride) plus a polyol (frequently glycerol) modified by the incorporation

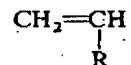
of the triglycerides of a natural plant oil. This improves solubility, enables air drying to occur and gives tougher films than with the unmodified resin.

OLDROYD DERIVATIVE (Codeformational derivative) Symbol d/dt . A time derivative operator for the transformation of convected to mixed coordinates in connection with rheological problems, whilst obeying the principle of objectivity. It is defined, in Cartesian coordinates, as,

$$d/dt \tau_{ij} = \partial \tau_{ij} / \partial t + u_i \partial u_j / \partial x_k - \tau_{ij} \partial u_i / \partial x_k - \tau_{ij} \partial u_j / \partial x_k$$

where τ_{ij} are the shear stress components (using the summation convention), u_i are the velocity components and x_k the coordinate directions.

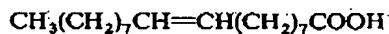
α -OLEFIN A compound of structure



where R is an alkyl or cycloalkyl group, i.e. an olefin substituted on the α -carbon atom. α -Olefins may be polymerised to poly-(α -olefins), usually by Ziegler–Natta polymerisation to isotactic polymers. Examples include propylene ($R = -\text{CH}_3$), butene-1 ($R = -\text{CH}_2\text{CH}_3$), 4-methylpentene-1 ($R = -\text{CH}_2\text{CH}(\text{CH}_3)_2$), hexene-1 ($R = -(\text{CH}_2)_3\text{CH}_3$) and octene-1 ($R = -(\text{CH}_2)_5\text{CH}_3$).

OLEFIN FIBRE Generic name for a fibre composed of a polymer with at least 85 wt% of ethylene, propylene or other olefin units, excepting amorphous rubbery polymers. Examples are Courlenc, Fibralon, Herculon and Vectra.

OLEIC ACID (*Cis*-9-octadecenoic acid)



M.p. 13.4°C (α -form), 16.3°C (β -form).

Occurs in the triglycerides of most plant oils to a significant extent (5–25% of the acid residues). Although the double bond enables it to react with atmospheric oxygen, unlike linoleic acid it does not air dry.

OLEORESIN The initial exudation from certain trees when the bark is wounded. An oleoresin consists of a resinous component together with an essential oil. The latter usually evaporates, leaving the hard resin. Best studied is pine oleoresin, from which the resin rosin and the essential oil turpentine are obtained.

OLIGOMER A polymer with only a few repeat units in each polymer molecule, i.e. having a degree of polymerisation of up to a value of about 10–20. Thus dimers, trimers, tetramers, etc. are oligomers. Oligomers are formed during the early stages of step-growth polymerisation or after extensive random scission degradation of a polymer. They are also formed by a chain polymerisation when extensive chain transfer occurs.

TELENE

468

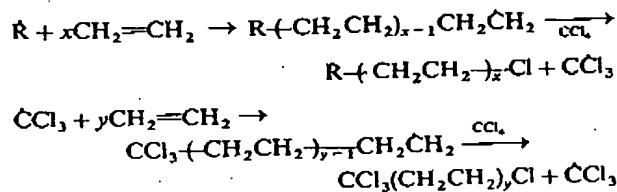
can be employed as liquid rubbers. The best known materials of this type are the carboxy-, hydroxy- and thiol-terminated polybutadienes. Such polymers are best prepared by anionic living polymerisation with a disfunctional catalyst. The resultant two living polymer chain ends are then reacted with an appropriate reagent to obtain the desired functional groups.

TELENE Tradename for copolymers of norbornene.

TELESCOPIC FLOW Flow of a fluid through a straight tube with a circular cross-section, such that each infinitesimally thin liquid cylinder of radius r coaxial with the tube moves rigidly parallel to the tube axis with a velocity (v) which depends only on r and is zero at the tube wall and at a maximum at the tube axis. If v depends linearly on r^2 then the flow is Poiseuille flow. If v is independent of r over some range of r then the flow is plug flow.

TELOGEN An active chain transfer agent which is used in the formation of telomers by telomerisation. Fragments of the telogen become incorporated as end groups in the telomer. Commonly used telogens are carbon tetrachloride and chloroform.

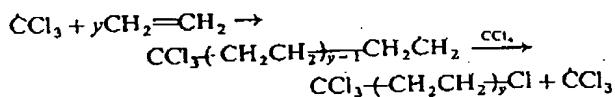
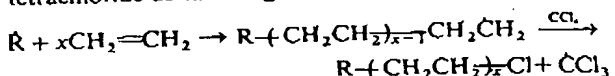
TELOMER An oligomer formed by chain polymerisation in which extensive chain transfer has occurred due to the presence of a chain transfer agent, so that the telomer contains fragments of the transfer agent as end groups. A widely studied example is the formation of ethylene telomers by free radical polymerisation of ethylene in the presence of carbon tetrachloride:



Typically x and y have values of 1-6. If the telomers can be separated, then they form useful intermediates for the synthesis of α,ω -disubstituted hydrocarbons. These can be converted to other useful products, e.g. to α,ω -amino acids useful as nylon monomers. Similar telomers of vinyl acetate provide useful coating materials.

TELOMERISATION Polymerisation carried out in the presence of a large amount of an active chain transfer agent (the telogen) so that only low molecular weight polymers (the telomers) are produced, which have end groups that are fragments of the telogen. Such end groups may subsequently be chemically converted to give useful α,ω -disubstituted molecules. The classic example is the free radical telomerisation of ethylene with carbon

tetrachloride as the telogen:



Typically x and y have a distribution of values in the range 1-6, so that separation of pure compounds is difficult. However, reaction conditions can be optimised for the production of a particular telomer. The telomers of ethylene can be converted to α,ω -amino acids useful as monomers for nylons. Similar telomers of vinyl acetate are useful as surface coatings.

TEMPERATURE GRADIENT FRACTIONATION Alternative name for Baker-Williams fractionation.

TEMPERATURE-TIME SUPERPOSITION Alternative name for time-temperature superposition.

TEMPLATE POLYMERISATION (Matrix polymerisation) The polymerisation of monomer (or monomers) attached in some ordered fashion to a template to produce a polymer with a precisely determined structure, (e.g. order of comonomer units or stereoregularity) complementary to that of the template. Frequently, enhanced rates of polymerisation also result. Biologically, protein synthesis is a template polymerisation, the template being the DNA. However, synthetic template polymerisations have also been studied, e.g. the polymerisation of α -amino acid *N*-carboxyanhydrides on polypeptide templates, 4-vinylpyridine on polystyrene-4-sulphonic acid, and methylmethacrylate on polymethylmethacrylate.

TENACITY The tensile strength of a fibre or yarn expressed as the breaking load in grams per denier or decitex. The tenacity and conventional tensile strength differ by the factor of the fibre density. Typically tenacities fall in the range 1-10 g denier⁻¹.

TENASCO Tradename for a high tenacity rayon.

TENAX Tradename for poly-(2,6-diphenyl-1,4-phenylene oxide).

TENITE Tradename for cellulose acetate, cellulose nitrate and polybutylene terephthalate.

TENITE BUTYRATE Tradename for cellulose acetate butyrate.

TENITE POLYETHYLENE Tradename for low density polyethylene.

TENITE POLYTEREPHTHALATE Tradename for a polyethylene terephthalate moulding material.